

ADAMS HERITAGE

3783 Maple Crest Court,
Inverary, Ontario K0H 1X0
Phone (613) 353 1463 Fax (613) 353 1463
email: nickadam@rideau.net

A Stage 1 & Stage 2 Archaeological Assessment of a
Development: 4639 Bank Street
Pt. Lot 17, Concession 5
Geographic Township of Gloucester
City of Ottawa

Prepared for: **Glenview Properties Inc.**

Contact: Jake Shabinsky
613-748-3700 | JShabinsky@glenview.ca
190 O'Connor Street, 11th Floor, Ottawa, Ontario, K2P 2R3

Licensee: Nick Adams MA
Prepared by: Nick Adams
License # P003
P003-0451-2019

August 21, 2019

Approval Authority:
City of Ottawa

Contact: Sean Moore
City of Ottawa
613.580.2424 ext. 16481
110 Laurier Ave W, Ottawa, ON K1P 1J1
Email: sean.moore@ottawa.ca

Regulatory Process: Planning Act
Report Type: Original

"I the undersigned hereby declare that, to the best of my knowledge, the information in this report and submitted in support of this report is complete and accurate in every way, and I am aware of the penalties against providing false information under section 69 of the Ontario Heritage Act."



CONTENTS

EXECUTIVE SUMMARY		1
1.0 PROJECT PERSONNEL		2
2.0 DEVELOPMENT CONTEXT		3
3.0 HISTORICAL CONTEXT		4
4.0 ARCHAEOLOGICAL CONTEXT		9
4.1 Archaeological Potential		16
5.0 RECOMMENDED FIELD METHODS (for Stage 2)		18
6.0 FIELD TESTING		19
7.0 RECORD OF FINDS		19
8.0 ANALYSIS AND CONCLUSIONS		20
9.0 RECOMMENDATIONS		20
10.0 REFERENCE / SOURCES		21
11.0 MAPS	starting page	25
12.0 IMAGES	starting page	36
Tables		
Table 1:	General cultural chronology of the Ottawa Region	15
Figures		
Figure 1:	The Study Area - General Location	25
Figure 2:	Section of the 1:17,500 topographical map	26
Figure 3:	Study Area Location	27
Figure 4:	Air Photograph of Study Area	28
Figure 5:	Physiography of the Study Area	29
Figure 6:	Coffin Map: 1825	30
Figure 7:	1863 Walling Map Segment	31
Figure 8:	1879 Historical Atlas Segment	32
Figure 9:	Soils of the study area	33
Figure 10:	Archaeological potential (City of Ottawa)	34
Figure 11:	Archaeological potential/Areas tested	35
Figure 12:	Location, orientation and direction of site photographs	43

EXECUTIVE SUMMARY

Stage 1 and Stage 2 archaeological assessment of the lands discussed in this report was prepared by Adams Heritage. Historical research was undertaken, previous archaeological investigations in the area were evaluated, and the geography of the site considered, to determine whether significant historical or pre-Contact cultural resources might exist on the property, and to determine whether further archaeological investigations are warranted.

The potential for archaeological sites relating to pre-Contact and post-Contact First Nations occupations is low to moderate. The potential for archaeological sites relating to Euro-Canadian historic occupation within the study area is moderate.

The Stage 1 recommendations are as follows:

- Since areas of archaeological potential have been determined, it is recommended that Stage 2 archaeological testing be conducted on the undisturbed portions of the property.
- This work should be conducted in accordance with the requirements of the Ontario Ministry of Tourism, Culture and Sport's "*Standards and Guidelines for Consultant Archaeologists (2010)*".

Stage 2

Field testing was conducted in August 2019 by a team of three experienced archaeological field workers (two field technicians and field director). Since no ploughable areas were identified, all areas retaining archaeological potential were tested using standard test pit survey techniques.

No artifacts were recovered and no archaeological resources were identified. Clearance of any conditions relating to archaeological heritage is recommended.

The Stage 2 Recommendations are as follows:

- It is recommended that no further archaeological assessment of the property is required.

Advice on compliance with legislation

1. Advice on compliance with legislation is not part of the archaeological record. However, for the benefit of the proponent and approval authority in the land use planning and development process, the report must include the following standard statements:

a. This report is submitted to the Minister of Tourism and Culture as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism and Culture, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

b. It is an offence under Sections 48 and 69 of the Ontario Heritage Act for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the Ontario Heritage Act.

c. Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the Ontario Heritage Act.

d. The Cemeteries Act, R.S.O. 1990 c. C.4 and the Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

2. Reports recommending further archaeological fieldwork or protection for one or more archaeological sites must include the following standard statement:

"Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the Ontario Heritage Act and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence."

1.0 PROJECT PERSONNEL

Project Personnel

Project Archaeologist / Field Director:	Nick Adams Lic/Pif: P003-0451-2019
Historical Research:	Christine Adams
Field Review:	Nick Adams
Field Testing:	Chris Cadue, Alex Talbot-Cadue
Report Authors and Preparation:	Nick Adams, Christine Adams

Weather Conditions

Fine, mild

Permission for Access

Property access permission provided by the client.

2.0 DEVELOPMENT CONTEXT

A Stage 1 and Stage 2 archaeological assessment was carried out on lands scheduled to be developed within part of Lot 17, Concession 5, Geographic Township of Gloucester (Figures 1-4). The archaeological assessment was conducted as a pre-purchase requirement. Permission for access and testing was provided by the client.

The property consists of a rectangular parcel of land of approximately 1.7 hectares (3.15 acres) in total area. The property is roughly rectangular with a maximum east-west width of 70 metres and a maximum north-south extent of 176 metres. It lies at approximately 100 metres above sea level.

The area is essentially level ground with the primary north-south frontage along Bank Street and the northern edge defined by Rotary Way. The Ottawa Rotary Home complex lies to the east while the southern edge is defined by prior residential developments. The study area is the last undeveloped parcel of land in the immediate area. It consists of overgrown former permanent pasture.

Numerous archaeological assessment studies have been conducted in the immediate vicinity of the current study area and a small number of archaeological sites have been recorded, assessed and investigated (see below). However, none of these archaeological sites have a direct bearing on the current study property.

3.0 HISTORICAL CONTEXT

Archaeological evidence indicates that the Ottawa Valley was a major trade route throughout the pre-Contact period. Discoveries of quantities of Native Copper artifacts from sources in the Lake Superior area at the Morrison and Allumettes Island Archaic sites (Chapdelaine and Clermont 2006: 202) provides a vivid insight into the far reaching and extensive nature of these activities.

With the arrival of French, Dutch and English settlers on the North American continent, the pre-existing trade routes were adapted to include the European appetite for fur. Following Samuel de Champlain's initial forays up the Ottawa River, French traders increasingly sought trade with the Algonquin, despite the on-going tensions and sporadic warfare with Mohawk raiding parties in the lower Ottawa River area.

Contact between Algonquin people and French traders occurred as early as 1603 at Tadoussac (Morrison 2005: 23) although contacts between Algonquin hunters and traders in the St. Lawrence Valley may have been occurring with Basques and Breton fishermen for many generations before (Ibid). During the 17th century conflicts between the Five Nations Iroquois, the French, the Algonquin and other First Nations in the Ottawa River / St. Lawrence River area culminated in the 'Iroquois Wars' of the late 1640's and 1650's - a series of coordinated raids throughout the Great Lakes / St. Lawrence region that resulted in the decimation, dispersal and relocation of First Nations groups throughout the region and a disruption of trade. Mohawk raids during the 1640's had forced the Algonquin to abandon settlements in the lower Ottawa River (Sulzman nd.), consolidating with kinsmen further upstream in the vicinity of Pembroke.

The Ottawa area continued to be inhabited by Algonquins throughout the seventeenth, eighteenth and nineteenth centuries, living lives very similar to those of their ancestors, despite the gradual changes that were occurring in their homeland. From the limited information available it would appear that seasonal patterns of settlement and movement mirrored those known from the preceding pre-Contact period, with seasonal populations aggregating during the warm season, for fishing and socializing, with dispersal into small, family based hunting groups to winter hunting grounds throughout the region.

Much of what is now the City of Ottawa was included in the Crawford Purchase of 1783. Captain W.R. Crawford negotiated with Mississauga Indians for a vast tract of eastern Ontario in exchange for,

"clothing for families, powder and ball for winter hunting and as much coarse red cloth as will make about a dozen coats and as many laced hats"¹

¹ Walker, Harry and Olive; Carleton Saga; Carleton County Council; 1968 p. 3

A second treaty made with "the Principal Men of the Mississauga Nation", at Kingston in 1819, extended the original purchase to include what is now the western part of Carleton County. For this piece of real estate the,

"said Nation of Indians inhabiting the said Tract, yearly and every year forever"

received:

"the sum of six hundred and forty two pounds ten shillings, in goods at the Montreal price, which sum the Chiefs parties hereto acknowledge a full consideration for the lands hereby sold and conveyed to His Majesty, His Heirs and Successors"²

There is nothing to indicate that the lands in Gloucester township were ever occupied by the Mississaugas, and all indications are that the indigenous populations at the time were Algonkins³.

The First Nations inhabitants of the middle Ottawa River are now collectively known as Algonquin or Algonkin, living on both sides of the Ottawa River in Ontario and Quebec. The study area lies within the area defined by the Algonquins of Ontario as their traditional territory (http://www.tanakiwin.com/Algonquins_of_ON.pdf).

During the early phases of Euro-Canadian settlement in eastern Ontario, the Algonquin's claim to the region were ignored or overlooked. As Lee Sulzman succinctly expressed it:

"To provide land for these newcomers, the British government in 1783 chose to ignore the Algonkin in the lower Ottawa Valley and purchased parts of eastern Ontario from Mynass, a Mississauga (Ojibwe) chief. Despite this, Algonkin warriors fought beside the British during the War of 1812 (1812-14) and helped defeat the Americans at the Battle of Chateauguay. Their reward for this service was the continued loss of their land to individual land sales and encroachment by American Loyalists and British immigrants moving into the valley. The worse blow occurred when the British in 1822 were able to induce the Mississauga near Kingston, Ontario to sell most of what remained of the Algonkin holdings in the Ottawa Valley. Because few, if any, Mississauga actually lived there, the price paid for them to sell another people's land was virtually nothing. And for a second time, no one bothered to consult the Algonkin who had never surrendered their claim to the area but still received nothing from its sale. Further losses occurred during the 1840s as lumber interests moved into the Upper Ottawa Valley. Treaties and purchases by the Canadian government eventually established ten reserves that permitted the Algonkin to remain in the area, but like most Native Americans in both Canada

² Ibid; p.8

³ The Algonkin Tribe: The Algonkins of the Ottawa Valley, An Historical Outline, by Peter Hessel, Kichesippi Books, Arnprior, 1987: p. 69

and the United States, they were allowed to keep only a tiny portion of what once had been their original homeland.” (Sulzman nd.).

While European settlement becomes the focus of most histories of the nineteenth century, it is evident that First Nations people continued to inhabit the area. One indication of this is that during 1845, while James Eadie was having a stone house constructed on the Richmond Road, the progress of the ‘stone teepee’ was watched by an encampment of Algonquin Indians. An Illustration by W.H. Bartlett, **“The Squaws Grave, Ottawa River”**, from the mid nineteenth century shows one such encampment along the Ottawa River. Such presences continued to be common throughout the nineteenth century and in to present times.

Lot 17, Concession 5, Rideau Front, Gloucester Township.

The first European settlers of the area which became Gloucester Township were Ira Honeywell and a man named Ferguson, who had a cabin on the Ottawa shore as early as 1803, but who abandoned it soon after. An early timberman named Steadman roughly laid out the metes and bounds of the township in 1792. European settlement of the area occurred relatively slowly compared to other areas of the province. It was the abundant red and white pine of the Ottawa Valley which proved to be one of the important factors in attracting settlers to the area. The British Navy was an almost inexhaustible market for timber, and the presence of awe-inspiring sources of water power on the rapids of the Ottawa combined to provide an attractive reason for settling the area. Lumbermen Philemon Wright and Braddish Billings (1783-1864) were active in the area by 1807. Billings, a son of Massachusetts and raised in Elizabethtown on the St. Lawrence, was originally an employee of Wright, but soon had his own timber business. In the winter of 1812/13 he cleared land on the east bank of the Rideau River near its mouth, and began a settlement. Until the opening of the Rideau Canal, Billings’ settlement was the only one in this part of the township⁴.

Settlement proceeded along the Rideau waterway at first, and the interior concessions were not settled until the early 1830’s. The first mention of any settler on Concession 5 in the township assessment rolls occurred in 1830⁵. The first mention of Concession 5, Lot 17 was on the 1834 assessment roll, when Robert Bratton is mentioned⁶. He was the owner of 200 acres, but none was yet cultivated, suggesting that he and his family had only just arrived in the vicinity. He had one milch cow and two young cattle. His farm was worth 45 pounds⁷. On the 1851 Census we find him, his wife Ann and adult son, Thomas, living in Gloucester. Thomas Bratton was born in Canada in 1831, suggesting that the family probably arrived in Gloucester about this time. At

⁴ Belden, H., ed. *Illustrated Historical Atlas of the County of Carleton (including city of Ottawa), Ont.* Toronto : H. Belden & Co., 1879. p. xxxv-vi

⁵ Early Assessment Rolls for Gloucester Township 1828-1841, Ontario Archives microfilm MS-116, on file at Stauffer Library, Queen’s University, Kingston Ontario.

⁶ Ibid

⁷ Ibid

the time of the 1851 Census, Robert Bratton and his wife were already in their sixties. Although they had been on their land for some time, they were still living in a log shanty⁸. By 1861 the Brattons had cleared 80 of their two hundred acres, and of this cleared land 64 acres was being actively cropped.

By 1865, Robert and Thomas were sharing the farm, according to a local directory⁹. By the time of the 1871 Census, Thomas Beaton¹⁰ (sic) is shown as the head of the household, and by 1874, part of the lot (the North Half) was in the hands of Robert Lee¹¹. The Lee homestead was on Lots 21 and 22 of Concession 4¹², so it is unlikely that they inhabited the north half of the lot.

The Historical Atlas of 1879 (Figure 8) shows Robert Lee as the owner of the north half of the lot¹³. The south half of the lot (ie. Within the study area) is owned by the estate of Robert Bratton, and by Anne Bratton¹⁴. The south half is divided along the long axis, with a dwelling set well back along the dividing line between the north and south halves of the lot. It is not possible to tell from the map alone whether this was the same building as the one shown on the map of 15 years previous. There is no indication of a building at either site on the 1945 air photo¹⁵.

By the time of the 1881 Census, Ann Bratton had probably died, as she is not found on the Census¹⁶. Thomas Bratton and his large family are present however, and an

⁸ 1851 Personal Census, Gloucester Township, facsimile
online@www.collectionscanada.ca/archivianet

⁹ *Mitchell & Co.'s Canada Classified Directory for 1865-66. -- Edited by J.L. Mitchell and James Sutherland. -- Toronto : Mitchell & Co., [1865?]. -- lxiv, 784, 226 p. -- Printed by Lovell & Gibson*

¹⁰ Index to Heads and Strays, 1871 Census, online@http://db.library.queensu.ca/census/

¹¹ *City of Ottawa Alphabetical, General, Miscellaneous and Subscribers'' Classified Business Directory, August, 1873, to August, 1874. To Which Is Added: Directories of Almonte, Arnprior, Aylmer, Beachburgh, Carleton Place, Fitzroy Harbor, Gatineau Point, Hull, New-Edinburgh, Pakenham, Pembroke, Renfrew, Richmond, and the Townships of the County of Carleton. -- Ottawa: Irwin & Co., 1873. 286 p. -- Printed by John Lovell.*

¹² Ibid

¹³ Belden; op.cit.

¹⁴ Ibid

¹⁵ Swayze: op.cit., p. 14

¹⁶ 1881 Census, Gloucester Township, transcription online@ www.familysearch.org.

1886 directory shows him continuing to farm Concession 5, Lot 17¹⁷. By 1901, Thomas had died, but his widow, Helen or Ellen, and their large family were still enumerated in Gloucester¹⁸. By 1911, two of the Bratton sons were in Manitoba, while Milton remained on the family farm¹⁹.

¹⁷ *The Union Publishing Co.'s Farmers and Business Directory, for the Counties of Carleton, Dundas, Glengarry, Grenville, Lanark, Leeds, Prescott, Russell and Stormont, 1886-7. -- Vol. 2. -- Ingersoll: Union Publishing, [1886?].*

¹⁸ 1901 Census, Gloucester Township, facsimiles and transcriptions online@www.automatedgenealogy.com

¹⁹ 1911 Census, Gloucester Township, facsimiles and transcriptions online@www.automatedgenealogy.com

4.0 ARCHAEOLOGICAL CONTEXT

Date of Field Review

August 12th 2019

Date of Field Testing (Standard 7.5.8.3)

August 15th 2019

Bedrock / Physiography

The Ottawa region is underlain by Paleozoic bedrock deposits of limestone, shale and sandstone (GSC Map 1508A), which, in some areas, have been overlain by relatively recent deposits of glacial till, fluvio-glacial and lacustrine deposits. These either pre-date, or date to events associated with the Champlain Sea epoch, which occurred between about 11,500 - 8,500 B.P. (Schut and Wilson 1987).

The study area lies within the Ottawa Valley Clay Plains Physiographic region. This broad physiographic region extends from Pembroke to Hawkesbury along the Ottawa River Valley and encompasses a broad area of clay plain, broken by ridges of rock or sand (Chapman and Putnam 1984: 209).

The property lies on a section of low relief till plain. The immediate vicinity of the study area would have been available for human occupation as isostatic rebound gradually lowered the water level of the Champlain Sea. Radio-carbon dates on shells found in Champlain Sea beach deposits indicate a beach just north of Stittsville was active at 130 metres a.s.l. at approximately 11,300±300 years ago (GSC-2248 - Richard 1982). A sample of whale bone discovered just north of the Ottawa International Airport at an elevation of 91 metres a.s.l. is dated to 10,420±50 (GSC-454 - Richard 1982). Four dates on organic materials have been acquired from Champlain Sea deposits located a few kilometres from the study area. Of particular note, a sample of shells returned a date of 10,880±160 (GSC-588 - Richard 1982) from materials recovered at an elevation of 97 metres a.s.l.

Since the study area lands lie at approximately 100 metres a.s.l. they would eventually have been accessible for occupation or settlement as the waters of the Champlain Sea receded, although they would probably not have presented a particularly enticing environment for settlement.

Soils

The soils within the study area consist of Leitrim Gravelly Loam. They consist of brown gravelly loam over shale bedrock (Hills, Richard and Morwick 1944). Although some small areas of this soil in Carleton County are suitable for general farming, most areas are used for permanent pasture and woodlots because of excessive drainage, stoniness and the proximity of bedrock to the surface.

Drainage

No watercourses or sources of water lie within the study area although a portion of the property is seasonally wet. A large wetland lies to the west of the study area.

Climate

The soil climate of the Ottawa region is humic, mild and mesic (Schut and Wilson 1987) with mean annual soil temperatures of between 8 and 15 degrees and a relatively short growing season lasting 200 and 240 days. Rainfall is moderate averaging 850 mm. per year. This climate, while adequate using modern farming techniques, was not particularly favourable for pre-Contact agriculture.

Vegetation

The study area consists of abandoned permanent pasture, now overgrown with low shrubs (willow, winterberry), milk weed, goldenrod and tall grasses.

Registered Archaeological Sites:

No archaeological sites have been registered within the study area²⁰.

The following sites have been registered within 3 kilometres of the study area, but none of these lie within or impinge upon the current study area and none are directly relevant to the current study (Standard 7.5.8.4).

Site Number	Site Name	Time Period	Cultural Affinity	Site Type
BhHv-18	Bratton	Post Contact	Euro-Canadian	agricultural farmstead
BhFw-25	Jockvale	Post Contact	Euro-Canadian	midden
BhFv-29	Lee/Robinson Farmstead	Post Contact	Euro-Canadian	agricultural farmstead
BhFv-26	McLaughlin	Post Contact	Euro-Canadian	agricultural farmstead
BhFv-25	Applewood			
BhFv-1	Kelly	Post-Contact	Euro-Canadian	agricultural farmstead

Studies of Adjacent Areas:

Four archaeological studies have been conducted on adjacent properties. A Stage 1 assessment of the Rotary property was conducted by Ken Swayze in 2007, with a Stage 2 assessment conducted by Adams Heritage the following year (Adams 2008). Stage 1 to 4 investigations of the adjacent properties at 4635, 4703 and 4723 Bank Street were conducted by Adams Heritage in 2008, including the excavation of the historic Bratton farmstead (BhHv-18) (Adams 2009).

²⁰ Information courtesy MTCS data files.

A number of archaeological studies on development properties have been conducted within parts of nearby properties (Mount McGovern 2001, Adams Heritage 2003, Golder Associates 2013a, 2013b, 2016a, 2016b, 2016c). None of these projects resulted in any archaeological discoveries which directly affect the current project.

Archaeological Summary

This overview is not intended to be a comprehensive thesis on the archaeology of Eastern Ontario. It is a thumbnail sketch of general trends, with the emphasis on the immediate vicinity of the study area.

Palaeo-Indian Period

Archaeologists have called Ontario's first people Palaeo-Indians (meaning 'old' or 'ancient' Indians). The Palaeo-Indian Period is estimated to have begun (in Ontario) about 11,000 years ago, and lasted for approximately 1,500 years (longer in northern Ontario). These people may have hunted migrating herds of caribou along the shores of vast glacial lakes, moving north into Ontario as the ice of the last glaciation receded. They have left little evidence of their passing, except for a few lance-shaped spear-points, and some campsites and places where they made their tools. Although the remains left by Palaeo-Indian people are quite sparse, through careful analysis of what has been found archaeologists are beginning to understand something about the way these ancient people lived. Palaeo-Indian people depended on hunting gathering and probably fishing for their subsistence. They did not raise crops. In order to gain a living from the sub-arctic environment in which they lived, Palaeo-Indian people had to exploit large territories. It is likely that they used toboggans, sleds and possibly watercraft in order to aid them move from one area to the next.

The Palaeo-Indian period has been divided into two subdivisions: the Early Palaeo-Indian period (11,000 - 10,400 B.P.) and the Late Palaeo-Indian period (10,400-9,500 B.P.) based on changes in tool technology. No Palaeo-Indian sites are known in the vicinity of the study area.

The Archaic Period

As the glacial ice continued to recede, the climate gradually became milder and more land became available for exploration and occupation. The Archaic Period spans the time between the end of the Palaeo-Indian Period and the beginning of the use of pottery in Ontario (about 2900 years ago). During the 6,500 years of the Archaic Period the exquisite stone tool workmanship of the Palaeo-Indian period was slowly abandoned. Archaic spear-points rarely reach the quality of workmanship of those of their forebears and are made from a greater variety of rocks. The Archaic period was one of long and gradual change. The long seasonal migratory movements of the Palaeo-Indians seem to have been abandoned as Archaic people focussed more closely on local food resources. They modified the equipment they made to cope with the transition from an open sub-arctic landscape to a more temperate, forested one. Archaic people began to make a wide variety axes, hammers and other tools by pecking and grinding rocks to the desired shape.

A small Archaic campsite was recently located during an archaeological assessment of lands along the Carp River, just to the north of Highway 417 (Adams 2004). Archaic materials have also been discovered in Leamy Lake Park, near the mouth of the Gatineau River (Watson 1999: 64). Significant evidence of Archaic occupation has

been noted throughout the Ottawa Valley (Sowter 1909, Kennedy 1962, 1967), particularly in the vicinity of the City of Pembroke, at the Morrison's Island-6 and Allumette Island-1 sites (Chapdelaine and Clermont 2006, Ellis and Ferris 1990, Kennedy 1962).

Early Woodland Period

Some time around 1000 B.C. the idea of using fired clay to make pottery containers began to spread into Ontario. This technology probably had little impact on the people of this province, however it is of enormous importance to archaeologists because although pots readily break in use, the broken pieces tend to last extremely well in the ground.

All over the world potters have found the semi-hard clay surface of freshly shaped pots (ie. before firing) to be a canvas for decoration and art. Since fashions and design preferences gradually change through time and from one people to another, the patterns of pottery decoration, and even the shape of the pots themselves provide valuable and accurate clues to the age and culture of the people who made them.

The Early Woodland people of Ontario were the first to use pottery in this province. In many other respects, people of the Early Woodland Period (c. 900 B.C. - 300 B.C.) continued to live in much the same way as their predecessors of the Late Archaic. Like the Late Archaic people, they buried their dead with great ceremony, often including attractive and exotic artifacts in the graves. The Early Woodland people of Ontario appear to have been in contact with, or at least heavily influenced by their neighbours to the south - particularly the Adena people of the Ohio Valley. To date, no Early Woodland archaeological sites have been recorded in the immediate vicinity of the study area.

The Middle Woodland Period

The most distinctive way in which the Middle Woodland period (2300 B.P. - 1100 B.P.) differs from the Early Woodland is in the way the people of Ontario had broadened the methods they used to decorate their pots. Changes in the shapes and types of tools used, the raw materials chosen and the ways in which these were acquired and traded are also apparent. However, these subtle technological changes mask more fundamental differences. Evidence from numerous archaeological sites indicate that by the Middle Woodland Period the people of Ontario began to identify with specific regions of the province. The artifacts from Middle Woodland period sites in southwestern Ontario differ quite noticeably, for instance, from those of the people in eastern Ontario. For the first time it is possible to distinguish regional cultural traditions - sets of characteristics which are unique to a part of the province. Archaeologists have named these cultural traditions LAUREL (throughout northern Ontario), POINT PENINSULA (in eastern and south-central Ontario), SAUGEEN (in much of southwestern Ontario) and COUTURE (in extreme southwestern Ontario).

Archaeologists have developed a picture of the seasonal patterns these people used in order to exploit the wide variety of resources in their home territories. During the spring, summer and fall groups of people congregated at lakeshore sites to fish, collect shellfish (in the south) and hunt in the surrounding forests. As the seasons progressed the emphasis probably shifted away from fishing and more towards hunting, as the need to store up large quantities of food for the winter became more

pressing. By late fall, or early winter, the community would split into small family hunting groups and each would return to a 'family' hunting area inland to await the return of spring.

Some Middle Woodland people may have been influenced by a vigorous culture to the south - the Hopewell. These people buried some of their dead in specially prepared burial mounds, and accompanied the bodies with many and varied objects. Some Ontario people, especially those in the Rice Lake and Bay of Quinte areas adopted this practice, although they tailored it to suit their local needs. Some archaeologists have argued that since not all people were buried in the same way, these rich burials indicate that a hierarchy or class structure was beginning to develop as has been noted among the Hopewell. Such class distinctions do not seem to have lasted long, however, and were not part of Late Woodland life. Significant evidence of Middle Woodland occupation of the Ottawa region has been discovered at Leamy Lake Park at the mouth of the Gatineau River (Laliberté 1999: 78) and numerous Middle Woodland finds have been made in the vicinity of Constance Bay and more recently along the Rideau River (Jacquie Fisher, Pers Comm.). No Middle Woodland sites are known in the immediate vicinity of the study area although a single 'Saugeen' style projectile point was found during the archaeological assessment of the adjacent property (Golder 2016a).

The Late Woodland Period

The easiest way for archaeologists to distinguish Late Woodland period archaeological sites from earlier Middle Woodland sites is by looking at the pottery. During the Middle Woodland period the people made conical based pottery vessels by the coil method and decorated them with various forms of stamps. By the beginning of the Late Woodland (ie. by A.D. 900) period the coil method had been abandoned in favour of the paddle and anvil method, and the vessels were decorated with 'cord-wrapped stick' decoration. While these transitions are useful to archaeologists they provide only a hint to the more fundamental changes which were occurring at this time.

Sometime after A.D. 500, maize (corn) was introduced into southern Ontario from the south. Initially this cultivated plant had little effect on the lives of people living in Ontario, but as the centuries past, cultivation of corn, beans, squash, sunflowers and tobacco gained increasingly in importance. Not surprisingly, this transition from an economy based on the products of the lake and forest, to one in which the sowing, tending and harvesting of crops was important, also hastened cultural and technological changes.

Initially at least, the changes were small. People were naturally conservative, and the risks of crop failure must have been too high to allow for too much reliance on the products of the field. Some re-orientation of the seasonal movements of these people must have occurred at this time. Fishing and hunting sites continued to be used although the pattern of summer gathering along the shores of the major lakes of the region probably diminished as the small plots of cultigens needed to be tended and harvested during the summer.

In the Ottawa valley area, it is unlikely that the cultivation of crops made much impact on the lives of the areas inhabitants who continued to rely mainly on fishing

and hunting for sustenance. The people of this area were the pre-Contact forebears of the people now collectively known as the Algonquin (or Algonkin) (Hessel 1987). They shared language and cultural traits and an subsistence based more on hunting and fishing than their culturally un-related Iroquoian neighbours to the south.

In the south, the settlements adjacent to the corn fields began to take on a greater permanency as cultigens became more of a staple food. The best quality, light, and easily tillable farmland was sought out for cultivation, with village sites located nearby, near a reliable source of water. As agricultural success increased, it became possible to store a supply of food for the winter. For the first time it was possible to stay in and around the village all year (in southern Ontario at least) instead of dispersing into family winter hunting camps. Villages became larger and more heavily populated. Hostilities erupted between neighbouring peoples, so that by A.D. 1000, some people found it necessary to defend their villages with stockades and ditch defences.

Late Woodland and Contact period occupations have been documented at the multi-component archaeological sites at the mouth of the Gatineau River in Leamy Lake Park (Saint-Germain 1999: 84) near to the Ottawa River shore in Cumberland Township (Neal Ferris, Pers Comm.), however no archaeological sites dating to the Late Woodland period have been recorded in the immediate vicinity of the study area.

Contact Period

In the early 1600's French explorers, traders and missionaries described the people they encountered in the vicinity of the Ottawa River, recognizing a number of small groups or bands (Kichesipirini, Kinouchepirini, Iroquet, Matouweskari, Nibachis, Weskarini etc.) based on localized focal areas (Allumette Island, the Ottawa River below Allumette Island, the South Nation River, Madawaska River, Upper Ottawa River near Cobden, the north side of the Ottawa River along the Lievre and the Rouge Rivers in Quebec) respectively (Sultzman, Lee n.d., Hessel 1987).

These people are now collectively known as Algonquin or Algonkin and are resident on both sides of the Ottawa River. The study area lies within the area defined by the Algonquins of Ontario as their traditional territory (http://www.tanakiwin.com/Algonquins_of_ON.pdf).

TABLE 1 Generalized Cultural Chronology of the Ottawa Valley Region

PERIOD	GROUP	TIME RANGE	COMMENT
PALAEO-INDIAN			
	Fluted Point Hi - Lo	11000 - 10400 B.P. 10400 - 9500 B.P.	big game hunters small nomadic groups
ARCHAIC			
Early	Side Notched Corner Notched Bifurcate Base	10000 - 9700 B.P. 9700 - 8900 B.P. 8900 - 8000 B.P.	nomadic hunters and gatherers
Middle	Early Middle Archaic Laurentian	8000 - 5500 B.P. 5500 - 4000 B.P.	transition to territorial settlements
Late	Narrow Point Broad Point Small Point Glacial Kame	4500 - 3000 B.P. 4000 - 3500 B.P. 3500 - 3000 B.P. ca. 3000 B.P.	polished / ground stone tools, river/lakeshore orientation burial ceremonialism
WOODLAND			
Early	Meadowood Middlesex	2900 - 2400 B.P. 2400 - 2000 B.P.	introduction of pottery elaborate burials
Middle	Point Peninsula Sandbanks/Princess Point	2300 B.P. - 1300 B.P. 1500 B.P. - 1200 B.P.	long distance trade burial mounds agriculture begins
Late	Pickering Middleport Huron / St. Lawrence Iroquois	1100 - 700 B.P. 670 - 600 B.P. 600 - 350 B.P.	transition to defended villages, horticulture, large village sites tribal organization, warfare / abandonment
HISTORIC			
Early	Algonquin	300 - present	
Late	Euro-Canadian / Algonquin	225 - present	European settlement

4.1 Archaeological Potential

The City of Ottawa's "Archaeological Potential" mapping indicates archaeological potential on part of the study area (ASI and Geomatics 1999).

For the purposes of this study, while the City of Ottawa's potential mapping was taken into account, a number of additional characteristics were considered. In general, these conform to the basic key archaeological site potential criteria identified by the Ontario Ministry of Tourism, Culture and Sport and described in their 'primer' document (MTC 1997) and re-emphasized in the recent "Standards and Guidelines for Consultant Archaeologists (MTC 2011)".

According to MTCS's 2011 "Standards and Guidelines" the following are characteristics that indicate archaeological potential (those affecting this property are highlighted in red):

- *Previously identified archaeological sites.*
- *Water sources. It is important to distinguish types of water and shoreline, and to distinguish natural from artificial water sources, as these features affect site locations and types to varying degrees:*
 - *primary water sources (lakes, rivers, streams, creeks)*
 - *secondary water sources (intermittent streams and creeks, springs, marshes, swamps)*
 - *features indicating past water sources (e.g., glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches)*
 - *accessible or inaccessible shoreline (e.g., high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh).*
- *Elevated topography (e.g., eskers, drumlins, large knolls, plateaux)*
- *Pockets of well drained sandy soil, especially near areas of heavy soil or rocky ground*
- *Distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings.*
- *Resource areas, including:*
 - food or medicinal plants (e.g., migratory routes, spawning areas, prairie), scarce raw materials (e.g., quartz, copper, ochre or outcrops of chert), early Euro Canadian industry (e.g., logging, prospecting, mining).*

-
- Areas of early Euro Canadian settlement. These include places of early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks.
 - **Early historical transportation routes** (e.g., trails, passes, **roads**, railways, portage routes)
 - Property listed on a municipal register or designated under the Ontario Heritage Act or is a federal, provincial or municipal historic landmark or site Property that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations.
MTCS Standards and Guidelines for
Consultant Archaeologists (2011)

Pre-Contact and Post-Contact First Nations Archaeological Sites

Based on these criteria, the archaeological potential for pre-Contact and post-Contact First Nations archaeological sites is moderate to low. The property lies distant from any significant water course and although it lies on a till plain which, during the demise of the Champlain Sea would have been accessible for settlement and use before many adjacent areas, no other topographical features are present on the property which might have proven especially attractive to past First Nations settlement.

Euro-Canadian Sites

The 1863 Walling map shows a single dwelling close to the Bank Street frontage. The 1879 Illustrated Historical Atlas indicates a dwelling further inland on the part of the lot attributed to Robert Bratton.

Investigations of the adjacent Rotary property did not result in the identification of any archaeological resources or the recovery of any artifacts (Adams Heritage 2008), while the investigation of the nearby Claridge Homes development (also part of Lot 17, Concession 5) resulted in the discovery and investigation of a historic dwelling, interpreted as the Bratton Homestead (Adams Heritage 2009).

'Standards and Guidelines' standard 1.4.1d does not permit exemption of any areas within 100 metres of a historic transportation route. A moderate archaeological potential for historic sites along the Bank Street frontage is therefore indicated.

5.0 RECOMMENDED FIELD METHODS (for Stage 2 testing)

The property consists of overgrown permanent pasture with a high shaly rock soil content (Standard 2.1.2.1c). Since the whole property lies within 100 metres of Bank Street, test pit testing should be conducted using a five metre test grid interval. Areas retaining archaeological potential are indicated on Figures 10 & 11.

Test pits should be at least 30 centimetres in diameter and excavated through any upper deposits until either sterile subsoil or bedrock is reached. All soils must be sifted through (at a minimum) 6mm hardware cloth screen. Excavation must continue for at least 5 centimetres into the subsoil. Any artifacts must be collected and bagged according to the provenience of their discovery (ie. test pit number/location, soil zone etc.) and retained for analysis.

6.0 FIELD TESTING

Test Pit Survey

Test pit survey was conducted of all areas (Figure 11). Test pit survey to within 1m. of existing buildings was not practical since no buildings are present. (Standard 2.1.2.4)

The whole property parcel was fully tested. All work was conducted under ideal weather conditions as indicated in the 'Images' section below. The ground was snow free and not frozen.

7.0 RECORD OF FINDS

No artifacts were recovered.

Inventory of Documentary Record from Field

Photographs and records²¹

Photos	24 General views
Digital field plan	updated in the field

²¹ retained on file by Adams Heritage

8.0 ANALYSIS AND CONCLUSIONS

During the Stage 1 & 2 archaeological assessment, this property was identified as having archaeological potential and should be subject to the appropriate archaeological testing as per the requirements of the MTCS "Standards and Guidelines for Consultant Archaeologists (2010)".

Stage 2 testing was conducted of those areas indicated on Figure 11 using the techniques recommended. No artifacts or evidence of archaeological resources was encountered.

Development of this property will have no impact on archaeological resources.

It is requested that the Ministry of Tourism, Culture and Sport issue a letter of concurrence indicating that the archaeological assessment obligations under the Ontario Heritage Act have been met for this project.

In addition to the "advice on compliance with legislation" cited above, if during the process of development any undetected archaeological resources or human remains of potential Aboriginal interest are encountered, the Algonquins of Ontario Consultation Office should be contacted immediately at:

Algonquins of Ontario Consultation Office
31 Riverside Drive, Suite 101
Pembroke, Ontario K8A 8R6
Telephone: (613) 735-3759
Fax: (613) 735-6307 e-mail: algonquins@nrtco.net

9.0 RECOMMENDATIONS

The recommendation is as follows:

- It is recommended that no further archaeological assessment of the property is required.

10.0 REFERENCES / SOURCES

Maps

- 1863 Map of the County of Carleton, Canada West, from surveys under the direction of H.F. Walling. Published by D.P. Putnam, Prescott C.W. (NMC 0025747).
- 1879 Illustrated Historical Atlas of the County of Carleton, 1879, H. Belden & Co. (reprinted by Wilson's Publishing Company, 1997)

Texts (consulted, not necessarily referenced)

Adams Heritage

- 2009 An Archaeological Assessment (Stage 1 to 3) of the proposed "Claridge Development Lands" 4635, 4703, 4723 Bank Street, Part of Lot 17, Concession 5, Township of Gloucester (Rideau Front), City of Ottawa, County of Carleton and the Stage 4 Investigations at BhHv-18. Report prepared for Claridge Homes under PIF# Stages 1-3: P003-203-2008, Stage 4: P003-207-2008.
- 2008 An Archaeological Assessment (Stage 2) of the proposed "Ottawa Rotary Home Foundation Respite Home Care Site", 4637 Bank Street, Part of Lot 17, Concession 5, Township of Gloucester (Rideau Front), City of Ottawa, County of Carleton. Report prepared for Stantec Consulting Ltd., 1505 Laperriere Avenue, Ottawa on behalf of Ottawa Rotary Home Foundation. Report prepared by Nicholas R. Adams, Archaeological Licence # P003-181-2008

Adams Heritage

- 2003 An Archaeological Assessment (Stages 1 & 2) of the Proposed Estate Lot Subdivision Development. Consultant's report prepared by Nicholas Adams, on file Ministry of Tourism, Culture and Sport, Toronto. CIF# P003-003/004.

ASI and Geomatics International Inc.

- 1999 "The Archaeological Resource Potential Mapping Study of the Regional Municipality of Ottawa-Carleton" Planning Report submitted to the Regional Municipality of Ottawa-Carleton.

Anderson, T.W., Mathewes, R.W., and C.E. Schweger

- 1989 Holocene climatic trends in Canada with special reference to the Hypsithermal interval; in Chapter 7 of **Quaternary Geology of Canada and Greenland**. R.J. Fulton (ed.); Geological Survey of Canada, Geology of Canada, no. 1 (also Geological Society of America, The Geology of North America, v K-1).

Chapdelaine Claude and Norman Clermont

- 2006 Adaptation, Continuity and Change in the Middle Ottawa Valley: A view from the Morrison and Allumettes Island Late Archaic Sites. in **The Archaic of the Far Northeast**. (Daniel Sanger and M.A.P. Renouf (Eds.)). University of Maine press, Orono.

Chapman, L.J., and D.F. Putnam.

- 1984 The Physiography of Southern Ontario, Ontario Ministry of Natural Resources, Third edition, 1984.

Day, G. M., and B. G. Trigger

- 1978 Algonquin. In **Handbook of North American Indians**: Vol. 15, Northeast, ed. B. Trigger, pp. 792-797. Smithsonian Institution, Washington, D. C.

- Ellis, C.J. and Neal Ferris,
1990 **The Archaeology of Southern Ontario to A.D. 1650.** Occasional Publication of the London Chapter of the Ontario Archaeological Society. Number 5. London.
- Gadd, N.R. (Ed.)
1988 **The Late Quaternary Development of the Champlain Sea Basin.** Geological Association of Canada, Special Paper 35, Ottawa.
- Golder Associates Ltd.
2013a Stage 1 Archaeological Assessment Remer Lands Concession 4, Lot 21 and 22, Historic Township of Gloucester, Carleton County, Ottawa, Ontario. Report conducted under archaeological licence P385-003-2013
2013b Stage 1 Archaeological Assessment Idone Lands Concession 4, Lot 22, Historic Township of Gloucester, Carleton County, Ottawa, Ontario. Report prepared under archaeological licence P385-004-2013
2015 Stage 2 Archaeological Assessment, Remer Lands, Concession 4, Lots 21 and 22, Historic Township of Gloucester, Carleton County, Ottawa, Ontario. Report conducted under archaeological licence / PIF Number: P386-0004-2013
2016a Stage 3 Archaeological Assessment, McLaughlin Site, BhFv-26, Lot 21, Concession 4, Geographic Township of Gloucester, City of Ottawa. Report conducted under archaeological licence / PIF Number: P386-0011-2014.
2016b Stage 3 Archaeological Assessment, Applewood Site, BhFv-25, Lot 21, Concession 4, Geographic Township of Gloucester, City of Ottawa. Report conducted under archaeological licence / PIF Number: P385-0005-2013
2016c Stage 4 Archaeological Assessment, McLaughlin Site, BhFv-26, Lot 21, Concession 4, Geographic Township of Gloucester, City of Ottawa. Report conducted under archaeological licence / PIF Number: P385-0023-2016
- Harris, R. Cole (ed.) and Geoffrey J. Matthews
1987 **Historical Atlas of Canada Volume I: From the Beginning to 1800.** University of Toronto Press. Toronto.
- Hessel, Peter
1987 **The Algonkin Tribe. The Algonkins of the Ottawa Valley: An historical outline.** Kichesippi Books, Waba, Arnprior, Ontario.
- Hills G.A., N.R. Richard and F.F. Morwick
1944 Soil Survey of Carleton County. Report No. 7 of the Ontario Soil Survey. Experimental Farms Service, Dominion Department of Agriculture and the Ontario Agricultural College.
- Morrison, James
2005 Algonquin History in the Ottawa River Watershed in A Background Study for Nomination of the Ottawa River under the Canadian Heritage Rivers System. www.ottawariver.org
- Laliberté, Marcel
1999 The Middle Woodland in the Ottawa Valley. *in* **Ottawa Valley Prehistory.** Outaouais No. 6. Outaouais Historical Society, Hull, Quebec.

- Marshall, I.B., J. Dumanski, E.C. Huffman and P.G. Lajoie
1979 **Soil Capability and Land Use in the Ottawa Urban Fringe**. Land Resource Research Institute, Research Branch, Agriculture Canada and the Ontario Ministry of Agriculture and Food.
- Mason, Ronald
1980 **Great Lakes Archaeology**. Academic Press
- Mount McGovern Co. Ltd.
2001 Stage 1 & 2 Archaeological Assessment of Subdivision 06T-93011, Gloucester Township. Report prepared under archaeological licence 2001-032-001
- MTCS
2010 Standards and Guidelines for Consultant Archaeologists. http://www.mtc.gov.on.ca/en/publications/SG_2011.pdf
- 1997 Conserving Ontario's Archaeological Heritage: An Educational Primer and Comprehensive Guide for Non-Specialists. Ministry of Citizenship, Culture and Recreation, Cultural Programs Branch, Archaeology & Heritage Planning Unit.
- Richard, S H,
1982 Surficial geology, Ottawa, Ontario-Québec / Geologie de surface, Ottawa, Ontario-Québec. Geological Survey of Canada, , 1506A
- Saint-Germain, Claire
1999 The End of the Pre-Contact Period in the Ottawa Valley - A Look at the Zooarchaeology of the Leamy Lake Park Sites. in **Ottawa Valley Prehistory**. Outaouais No. 6. Outaouais Historical Society, Hull, Quebec.
- Schut, L.W. and E.A. Wilson
1987 **The Soils of the Regional Municipality of Ottawa-Carleton** (excluding the Ottawa Urban Fringe). Vols. 1 & 2. Report No. 58 of the Ontario Institute of Pedology.
- Sowter Edwin T. W.
1909 Algonkin and Huron Occupation of the Ottawa Valley, *The Ottawa Naturalist*, Vol. XXIII, No. 4: 61-68 & Vol. XXIII, No. 5:92-104.
- Spence, Michael W, and Robert H. Pihl
1984 "The Early and Middle Woodland Occupations of Southern Ontario: Past, Present, and Future Research." in *Arch Notes*, March/ April, 1984.
- Sultzman, Lee
n.d First Nations Histories: Algonkin. <http://www.tolatsga.org/alg.html> (accessed May 13th 2013).
- Swayze, Ken
2007 A Stage 1 Archaeological Assessment of the Ottawa Rotary Home site, Part of N½ Lot 17, Concession 5 (RF), Gloucester, City of Ottawa. Licence report P039-132-2007 prepared by Kinickinick Heritage Consultants.
- Trigger, Bruce (editor)
1978 **Handbook of North American Indians**, Vol 15, Northeast. Smithsonian Institution, Washington.

Trigger, Bruce G.,
1985 **Natives and Newcomers: Canada's "Heroic" Age Reconsidered.** McGill-Queens University Press. Kingston and Montreal.

Watson, Gordon
1999 The Palaeo-Indian Period in the Ottawa Valley. in **Ottawa Valley Prehistory.** Outaouais No. 6. Outaouais Historical Society, Hull, Quebec.

Other Sources

Specific historical references cited in the text as footnotes.

11.0 MAPS

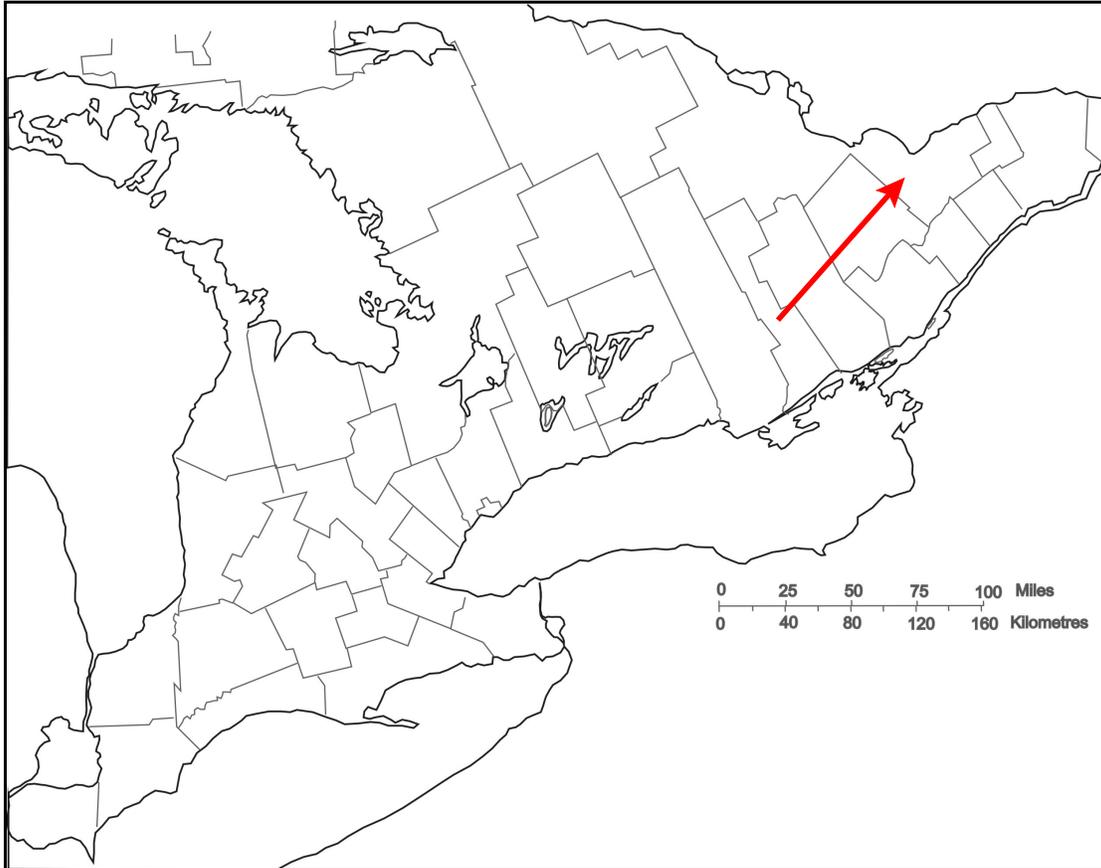


Figure 1: General location of the study area.

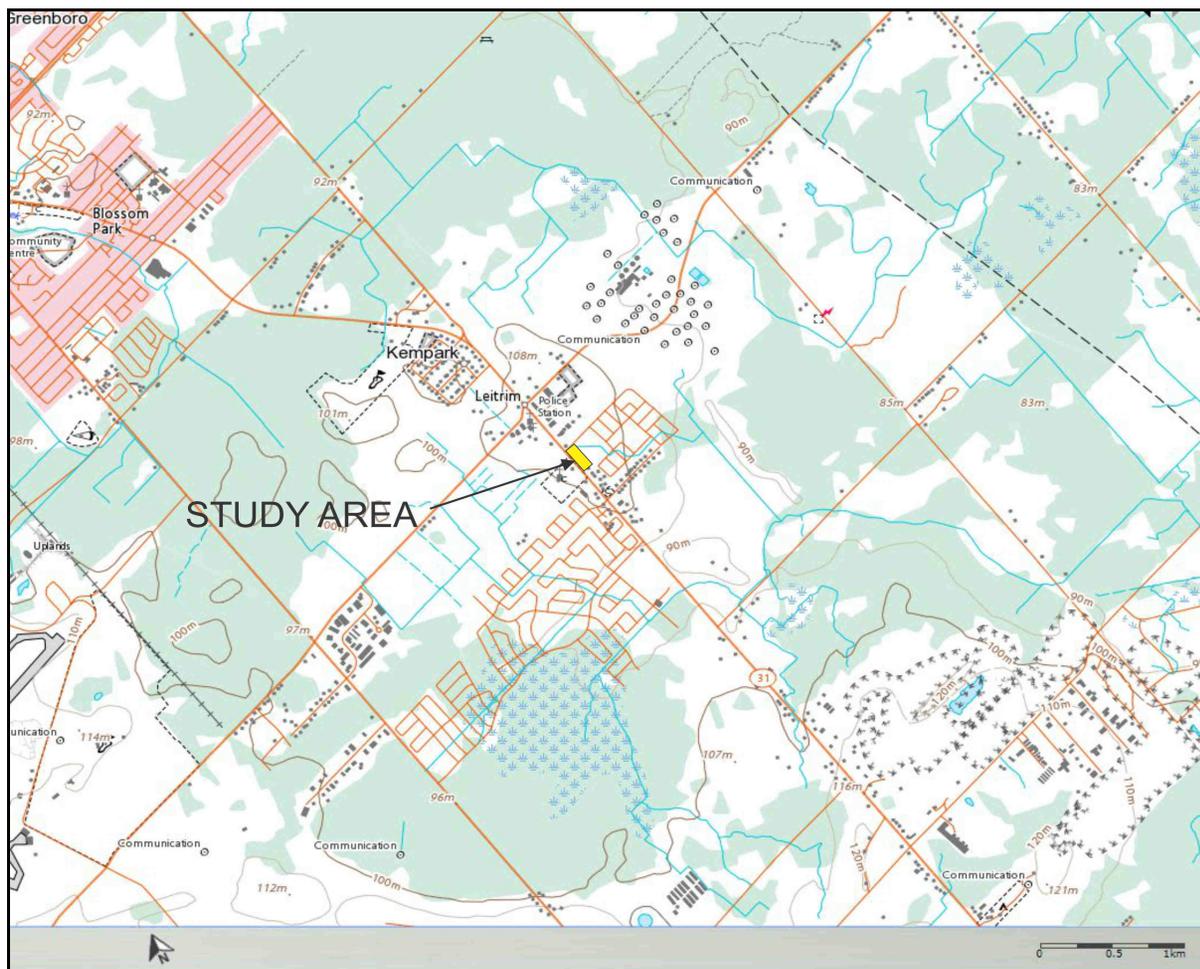


Figure 2: Location of the study area (1:30,000 Source: Atlas of Canada - Toporama)

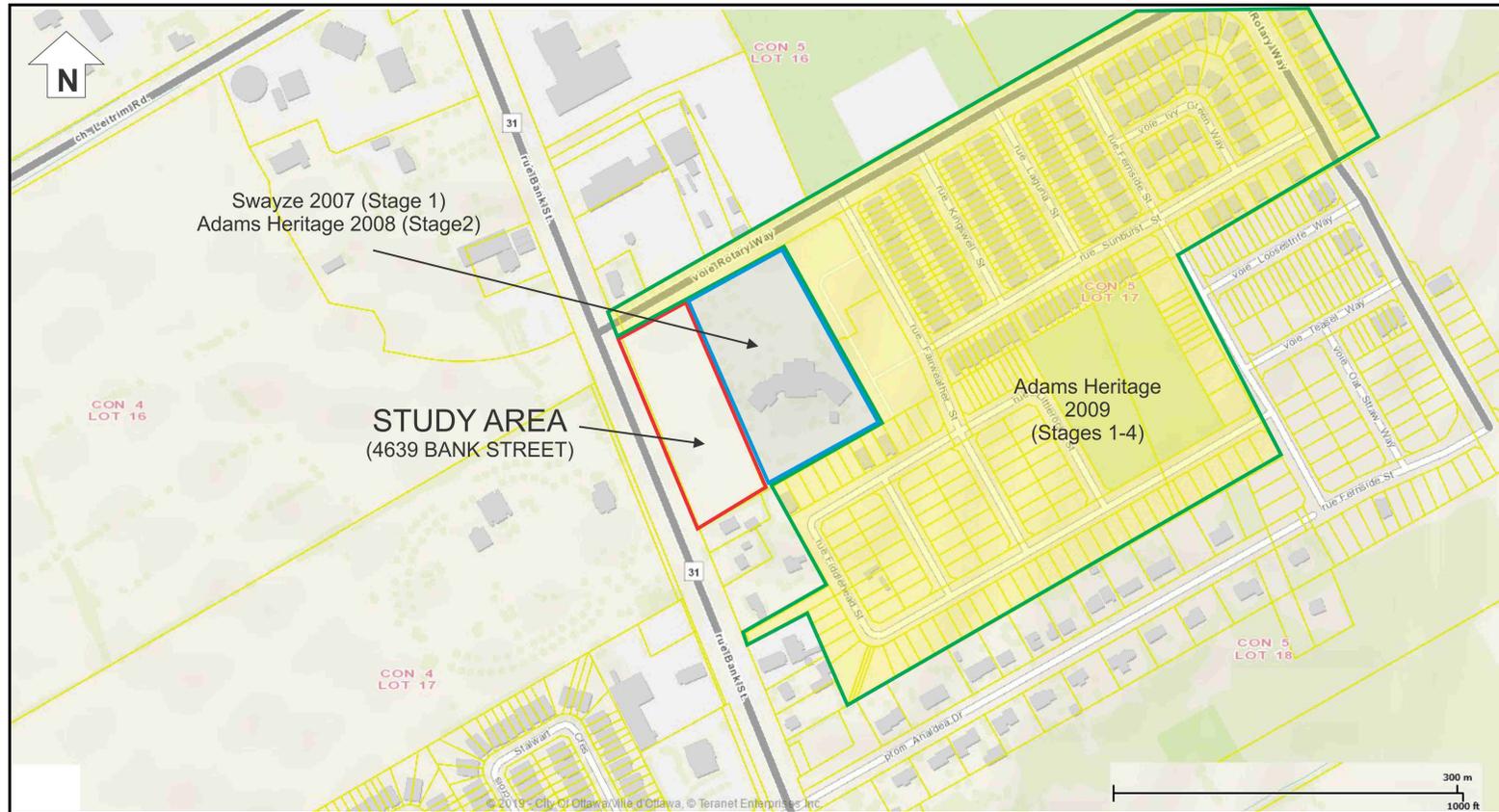


Figure 3: Location of the study area showing prior archaeological assessments (Source: eMaps Ottawa)

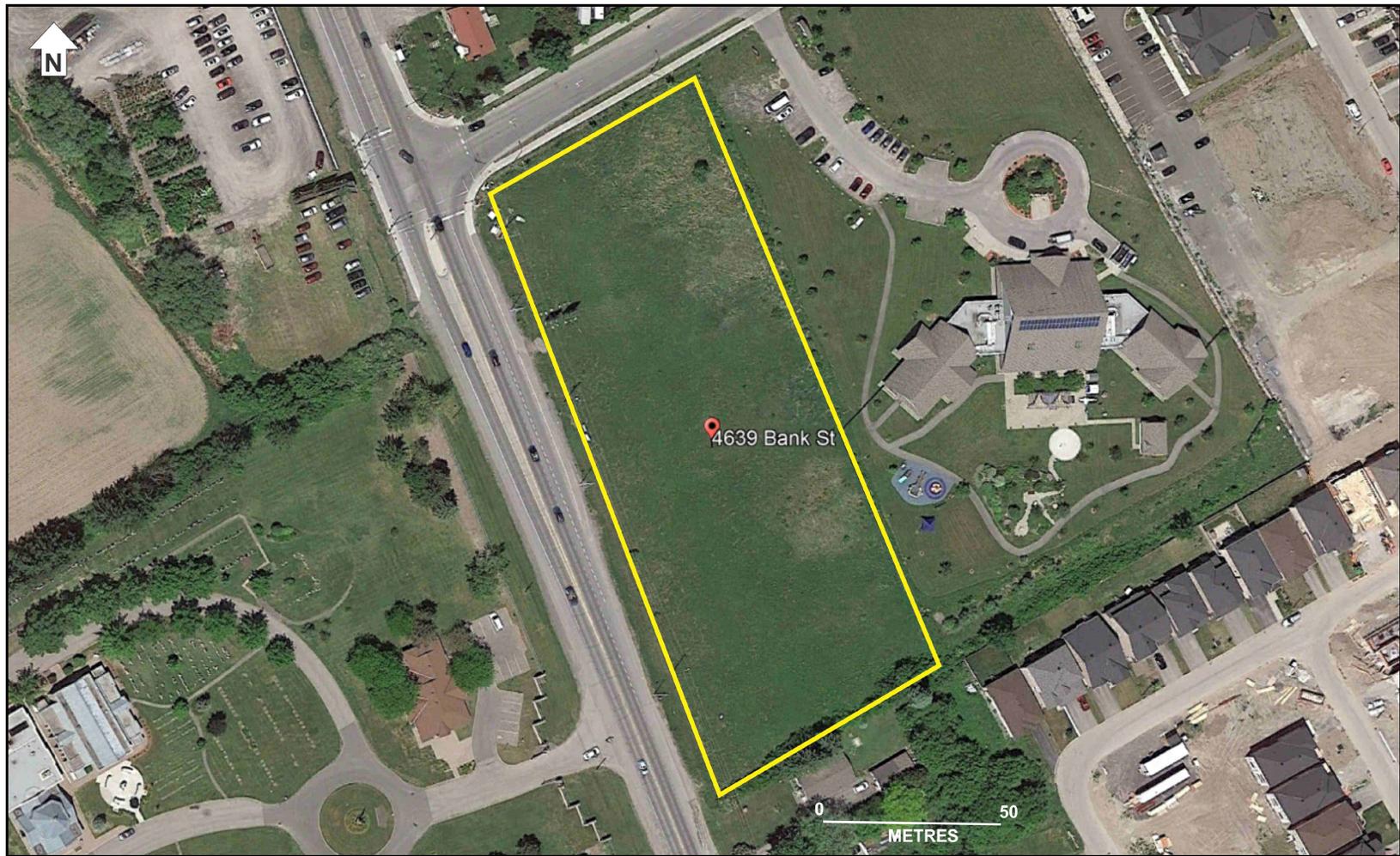


Figure 4: Air photograph of the study area (Google Earth 2017).

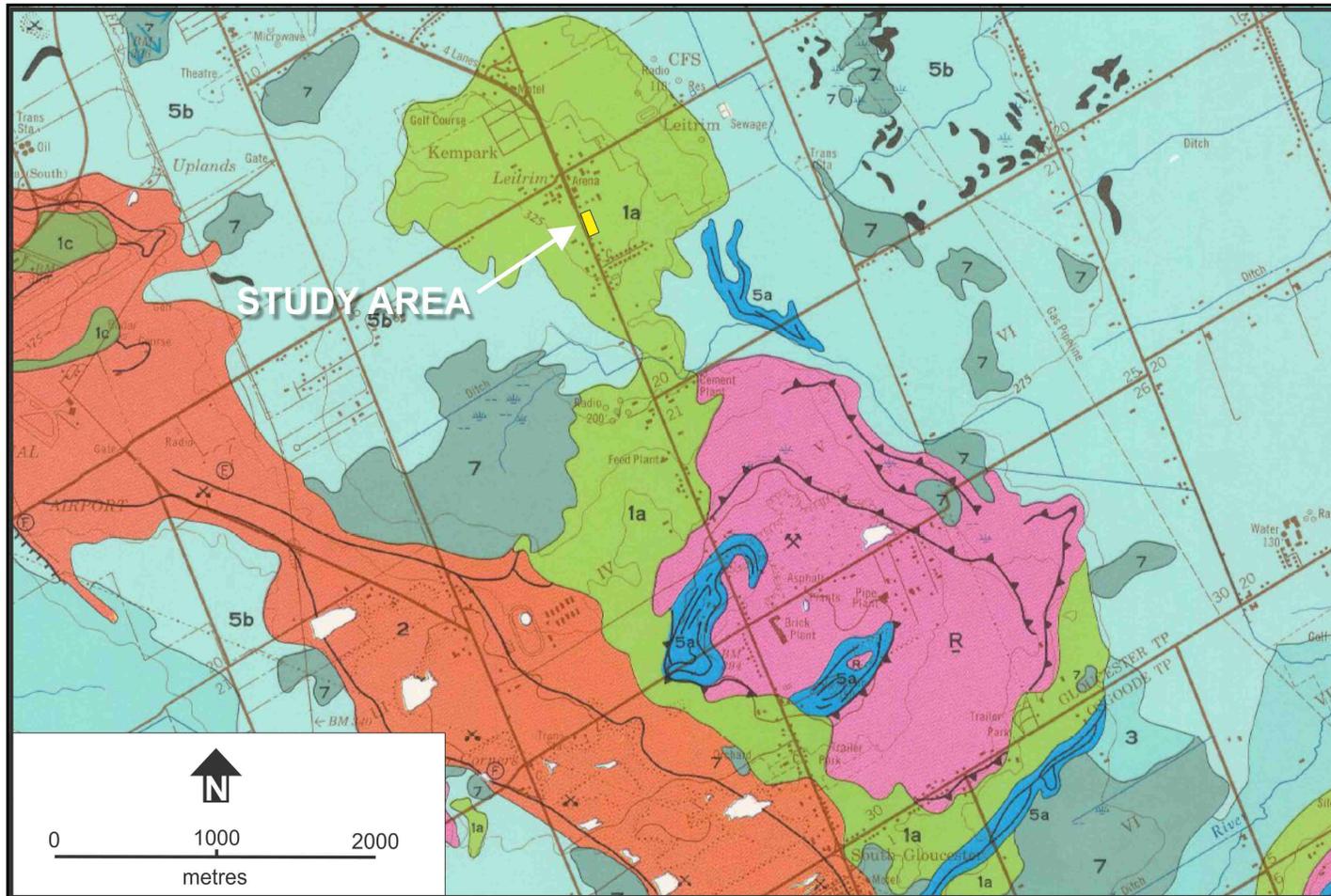


Figure 5: Physiography of the study area.

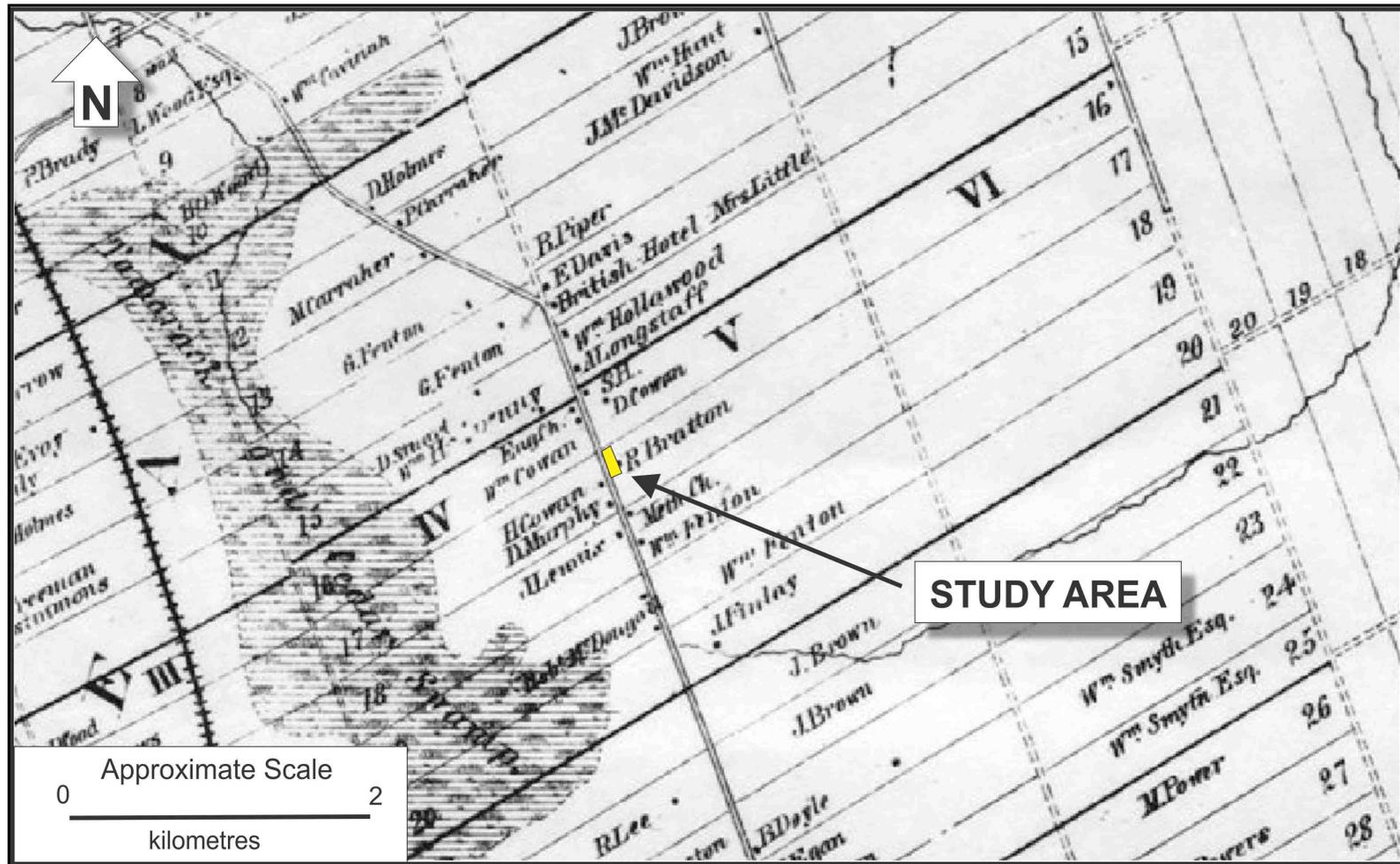


Figure 7: Portion of the 1863 Walling map of Carleton County showing the approximate location of the study area.

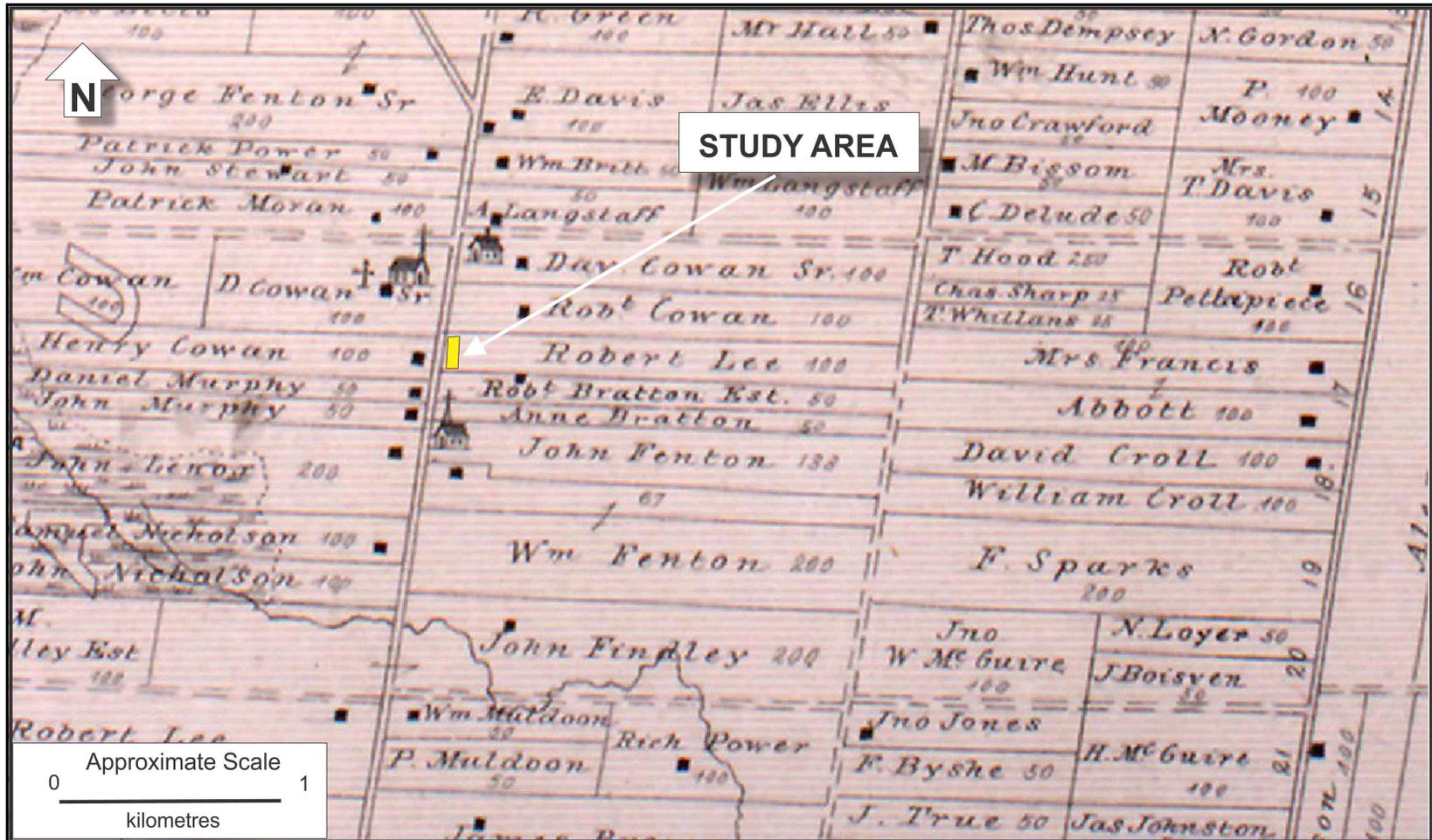


Figure 8: Portion of the 1878 Illustrated Historical Atlas of Carleton County showing the approximate location of the study area.

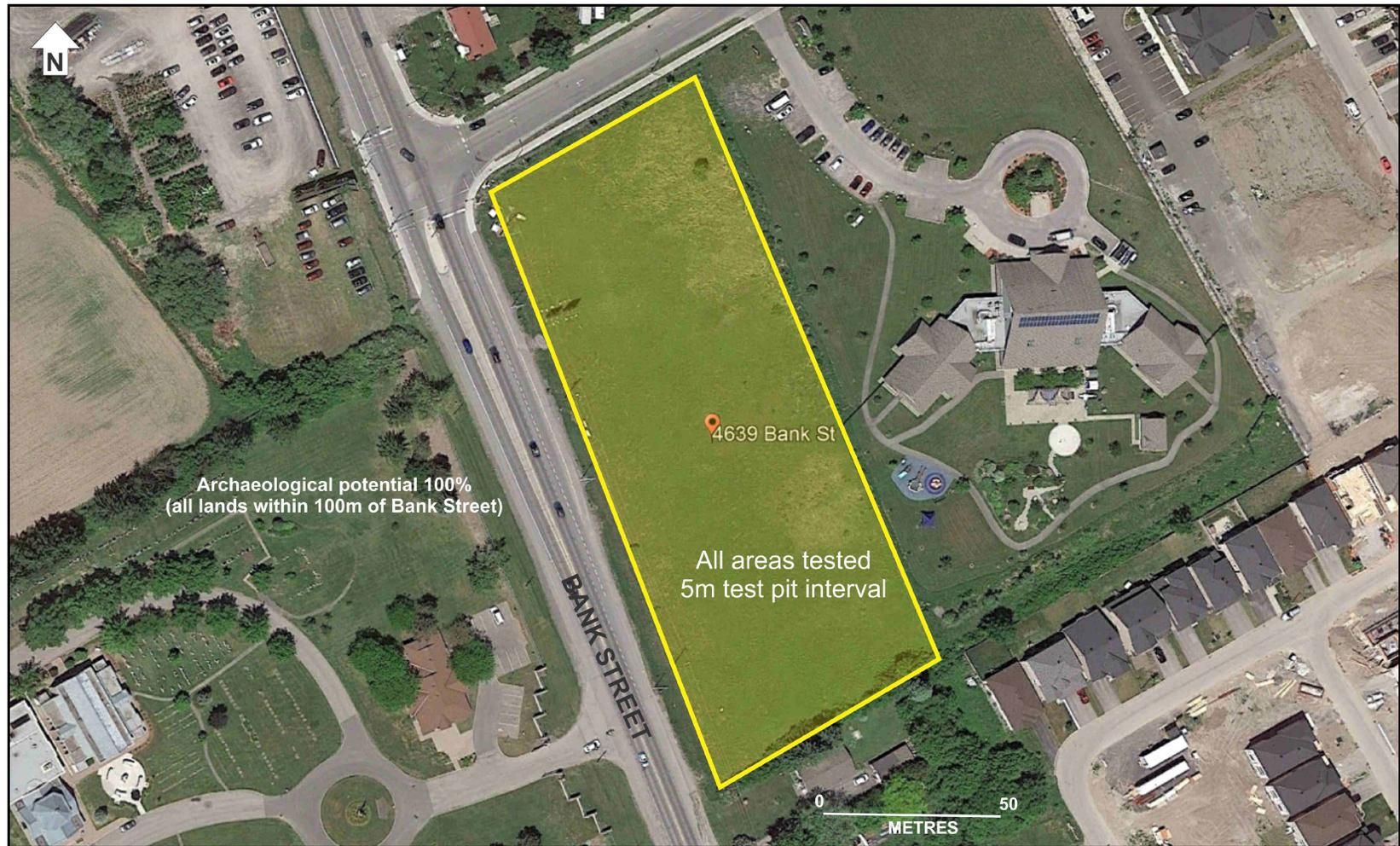


Figure 11: Archaeological potential / Areas tested and techniques employed.

12.0 IMAGES



Plate 1: Testing in progress.



Plate 2: General view looking north from centre of study area.



Plate 3: Testing near the southeast corner of the property.



Plate 4: Northwest corner of the property adjacent to Bank Street.



Plate 5: General view looking north. A seasonally wet area lies between the two main shrubs.

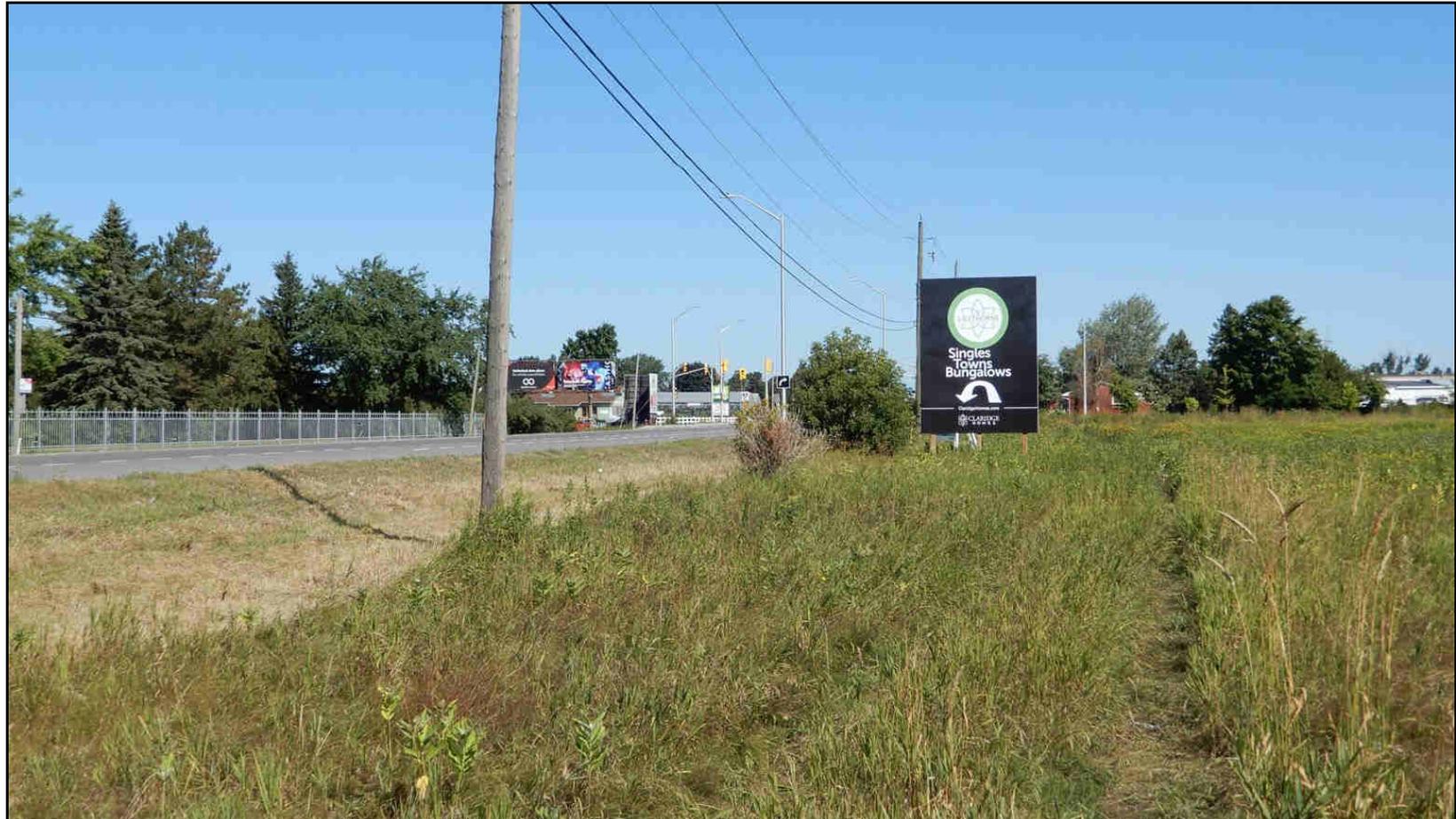


Plate 6: View of the study area along the Bank Street frontage.



Plate 7: Testing adjacent to the Rotary property.

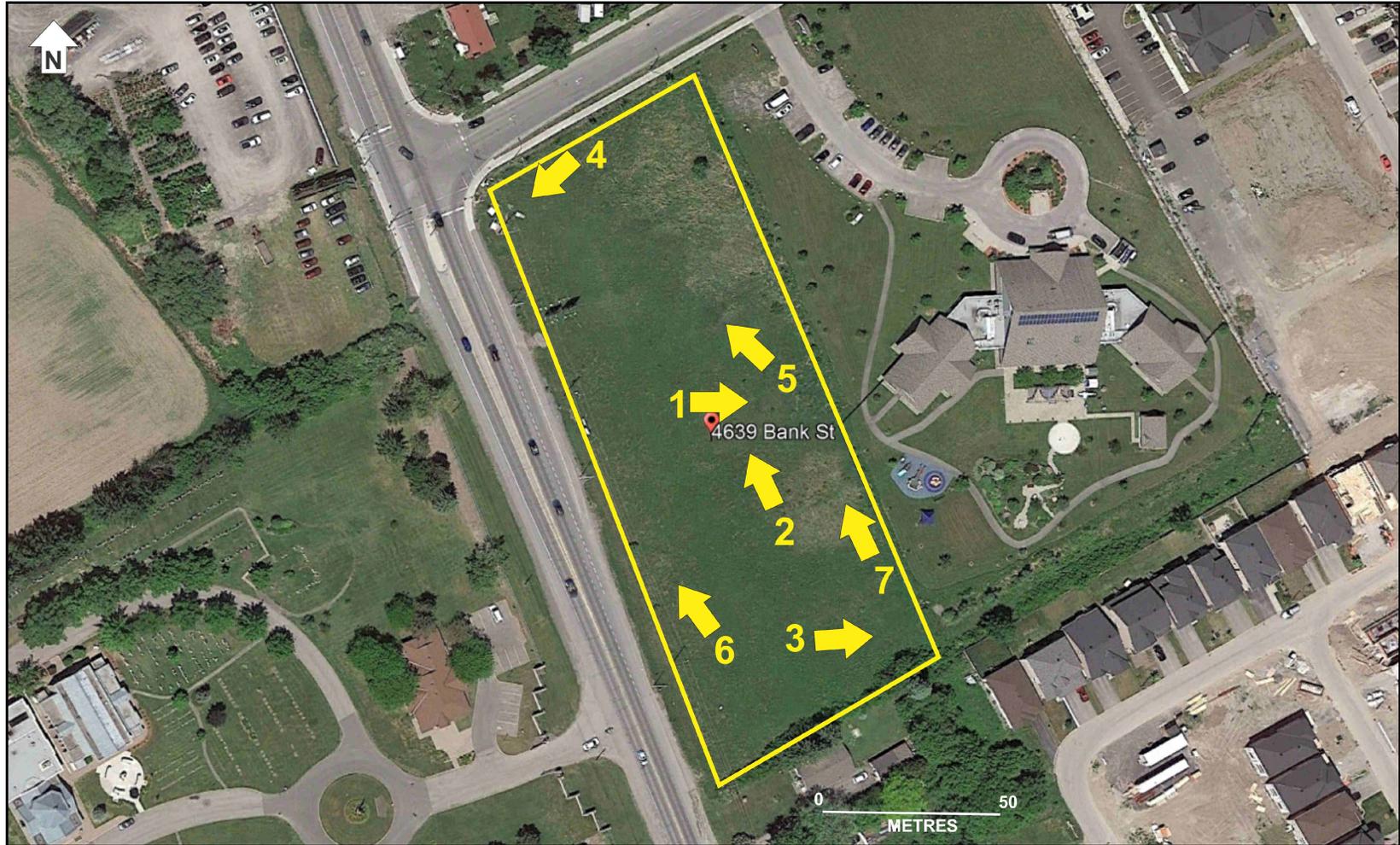


Figure 12: Photographs included in this report showing location and orientation.